POSSIBLE STATES OF LAST COLUMN

COMPLETELY FILLED

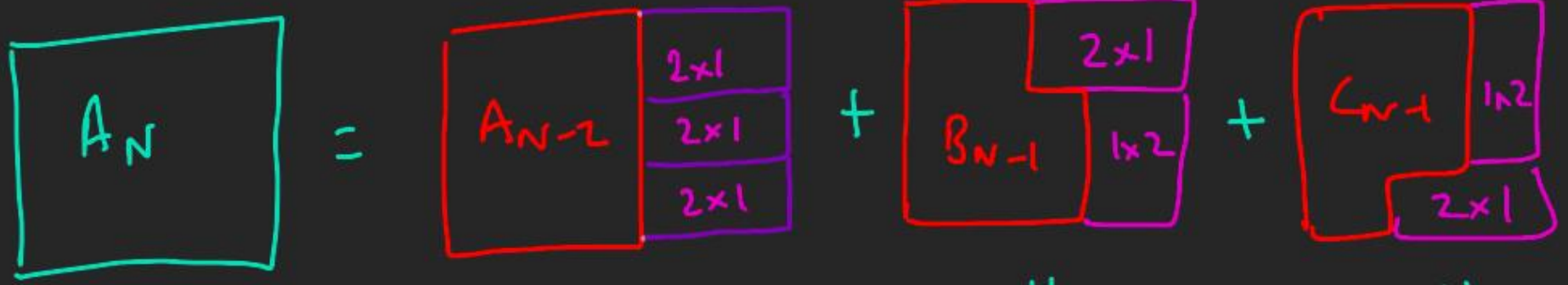
TOP CORNER EMPTY

BOTTOM CORNER EMPTY

Even though these are diff states, they will be eqvd fr same n i.e. $B_n = C_n$

FINDING RECCURENCE RELATION

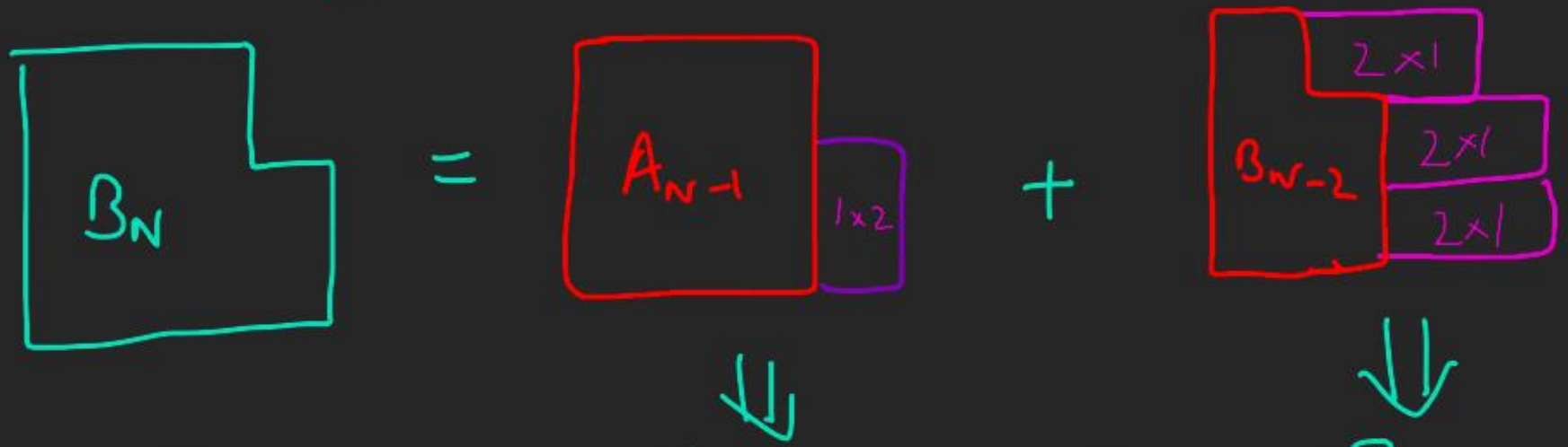
Calculating A_N



$$A_N = A_{N-2} + B_{N-1} + C_{N-1}$$

$$A_N = A_{N-2} + 2 * B_{N-1}$$

Calculating B_N



$$B_N \equiv A_{N-1} + B_{N-2}$$

FINAL RECURSIVE RELATIONS:

$$A_N = A_{N-2} + 2 * (B_{N-1})$$

$$B_N = A_{N-1} + B_{N-2}$$

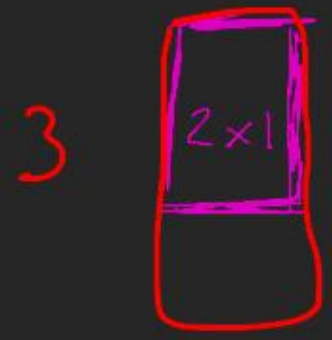
BASE CASES

A
3×0

A
3×1

B
3×0

B
3×1



$A_0 = 1$ $A_1 = 0$

LAST COL COMPLETELY FILLED

$B_0 = 0$ $B_1 = 1$

TOP OR BOTTOM CORNER EMPTY